STEADY STATE TEMPERATURE PROFILE IN A
CYLINDER HEATED BY MICROWAVES, H. W.
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We have developed a new theory to calculate the steady
state temperature profile in a cylindrical sample
positioned along the entire axis of a cylindrical
microwave cavity. Temperature profiles were computed
for alumina rods of various radii excited by one of the
TM0n0 modes with $n = 1$, 2 or 3. Sample surface and
center temperature will be presented as a function of
total sample absorbed power or electric field strength at
the sample surface. An approach for attaining more
uniform heating within the sample by reducing the
magnitude of the inverted temperature profile using a
concentric outer cylindrical tube will be discussed.
[Work supported by NASA]